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A Description of Multimedia Presentation of COBRAS Vignette Training Support Package Information

R. Gene Hoffman

Human Resources Research Organization

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14. ABSTRACT (Maximum 200 words): The purpose of this paper is to describe a multimedia presentation of the background information needed to participate in a COBRAS vignette staff training exercise. Vignette exercises provide opportunities for brigade staffs to practice selected aspects of the planning and execution of heavy armored brigade missions. Because each exercise targets a different staff process, participants must become acquainted with the background scenario that provides the context for the activities they will practice. Training materials originally developed for the presentation of this background information were paper-based. To the detriment of the exercise, participants have had a tendency to avoid reading these materials. Multimedia may provide a more stimulating and efficient delivery method, but only if it is well designed. The outline of a multimedia presentation for one of the vignettes is developed using guidelines concerning the structure of the information being presented, sensory modalities suited to types of information, and principles of intrinsic motivation. The paper recommends testing the effectiveness of multimedia for delivering this type of training information.					
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Research Product 97-16

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FOREWORD

In 1994 the Army embarked on a widespread training effort known as the Force XXI Training Program to meet the challenges of decreasing resources and increasing performance expectations. In midyear, a Memorandum of Agreement was signed between the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) and the U.S. Army Armor Center and Fort Knox (MG Larry Jordan, Commanding General) that established the virtual brigade training program (VBTP). As part of the VBTP, the ARI Armored Forces Research Unit at Fort Knox, the Directorate of Training and Doctrine Development-Force XXI, and Fort Knox joined forces to sponsor research and development of simulation-based training for the conventional mounted brigade staff. The work was performed under a project called the *Combined Arms Operations at Brigade Level, Realistically Achieved Through Simulation* (COBRAS).

The training products developed under COBRAS were designed to provide practical experience for battle staffs at brigade level in a scenario-based tactical setting, facilitated by the use of simulation to generate tactical information and cues. Central to the development effort was an analysis of performance requirements encompassing the full spectrum of staff activities: planning, preparation, execution, and postmission sustainment activities.

COBRAS training products are a complete package of instructions and scenario details for trainers and training participants. The package is paper-based, with multiple volumes. This report describes how the same information could be delivered in an alternate, multimedia format. The report will be useful for training program proponents in determining whether to allocate resources to the development of such alternative forms of information delivery.

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A DESCRIPTION OF MULTIMEDIA PRESENTATION OF COBRAS VIGNETTE TRAINING SUPPORT PACKAGE INFORMATION

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A DESCRIPTION OF MULTIMEDIA PRESENTATION OF COBRAS VIGNETTE TRAINING SUPPORT PACKAGE INFORMATION

Introduction

Combined Arms Operations at Brigade Level, Realistically Achieved through Simulation (COBRAS) vignettes are short, independent exercises designed to provide selected staff members of a conventionally equipped heavy brigade with an opportunity to practice working together as a team (Campbell & Deter, in press). Instructions for conducting and participating in these vignettes are delivered in a series of paper-based products called training support packages (TSPs). These TSPs contain interrelated information, which is not always easy to digest. Furthermore, our experiences with this and similar training programs have indicated that training participants are reluctant to read the TSPs. TSP information, however, is necessary in order to receive quality practice from a vignette. The purpose of this paper is to describe the use of personal computer (PC) based, interactive multimedia for presenting vignette TSP information, focusing specifically on training participants. Multimedia presentation, which can mix presentation modalities and offer interactive exploration, may stimulate more interest in the information and, consequently, may generate more involvement in the exercise.

This paper is presented in two sections. The first section provides background information about the COBRAS vignettes. This section highlights the necessity of getting participants fully acquainted with the tactical situation in which they will be practicing their staff processes. The second section of the paper describes multimedia presentation of vignette TSP information by examining the parts of a specific vignette and describing how they could be formatted for multimedia delivery.

Background Description of COBRAS Vignettes

Vignettes provide practice on isolated segments of the brigade staff process with each vignette focusing on a different aspect of the staff planning process. Vignettes depend on practicing the selected activities outside their normal context. For example, a particular vignette may target a staff rehearsal, omitting the planning and preparation process that leads up to rehearsal. Furthermore, each vignette includes only the staff members necessary for the activity; the entire brigade staff does not participate. The topics and participants for the COBRAS vignettes are presented below in Table 1.

Ordinarily, the staff process is an integrated, continuous effort with each activity building on past events that have unfolded during the exercise. With vignettes being isolated segments of staff activity, participants must become acquainted with all of the background they would have normally acquired in the on-going process of staff activity. Thus, it is particularly important for vignette participants to digest the TSP information.

Table 1

Topics and Participants for COBRAS Vignettes

VIGNETTE TITLE	PARTICIPANT LIST
Vig 1: Plan for Dislocated Civilians	S1, S2, S4
Vig 2: Plan Refuel on the Move	S4, FSB Commander
Vig 3: Develop Concept of Service Support	S1, S4
Vig 4: Develop Reconnaissance and Surveillance Plan	S2, S3
Vig 5: Conduct Target Development	XO, S2, S3, FSO
Vig 6: Develop Air Defense Concept	S2, S3, ADCOORD
Vig 7: Develop Contingency Plan	S2, S3, Engineer, FSO
Vig 8: Conduct Mission Analysis	XO, S1, S2, S3, S4, Engineer, FSO, ADCOORD
Vig 9: Develop Courses of Action	XO, S1, S2, S3, S4, Engineer, FSO, ADCOORD
Vig 10: Conduct Course of Action Analysis	XO, S1, S2, S3, S4, Engineer, FSO, ADCOORD
Vig 11: Conduct Special Staff Rehearsal	XO, S2, S3, Engineer, FSO, ADCOORD
Vig 12: Coordinate Mission Operations (Janus)	XO, S2, S3, Engineer, FSO, ADCOORD
Vig 13: Coordinate Mission Transition—Offense to Defense (BBS)	XO, S1, S2, S3, S4, FSB Commander, Engineer, FSO, ADCOORD

Information Required to Participate in a Vignette Training Session

The information for the 13 vignettes is packaged in 14 separate volumes. One volume is an overview to the vignette training concept, which addresses general questions about the use and implementation of the vignettes. In addition, each vignette is described in detail in its own individualized volume. Each of these individual volumes contains a guide for the training coordinator and a guide for the training participants. Two vignettes are supported by simulations. The TSP volumes for these two vignettes also contain a simulation support coordinator's guide, and other guides with instructions for the simulation operators and roleplayers.

The training participant guides present three types of information: (a) introduction to vignette training, (b) scenario and situational context, and (c) training objectives.

Introduction to vignette training. First, training participants are given an overview of the vignette exercise. This includes:

- scope of vignette training,
- list of training objectives and tasks for the specific vignette,
- the participants in the vignette, and
- preparation overview.

Scenario and situational context. Vignette participants practice their skills in a scenario context. In a more typical staff training exercise, much of the situational knowledge is built up by participating in the exercise. Because the vignettes carve out selected aspects of staff activity, the typical build-up must be replaced with TSP delivery of scenario background information. Therefore, the second type of information required to perform a vignette is the *scenario and situational context*, including:

- up-to-date tactical information portrayed by orders, annexes, maps, graphics, recent intelligence summaries, and so on,
- brigade status information, such as equipment and supply status, locations of all units, personnel strengths, enemy locations and strengths, and
- descriptions of all previous notional staff actions and decisions leading up to the events included in the vignette.

Training objective and tasks. The third type of information required to participate in a COBRAS vignette is knowledge of the training objective and tasks being practiced in the vignette. This category of information has two levels of meaning. First, the participants should know which tasks are to be practiced in order to know where to direct their effort and attention during the exercise. With regard to this level of information, each vignette TSP presents a list of the training tasks as part of the introduction. Second, vignette participants must have some level of knowledge of how to do those tasks. Complete knowledge is not necessary because the vignette is an opportunity to expand the participants' knowledge while practicing the tasks. On the other hand, the vignettes are not designed as initial instruction. Several items in the vignette TSP address "how to" information.

First, the vignette participants' guides include reference lists which direct participants to additional information on how to perform. Second, each vignette training coordinator guide contains a series of questions about performance of the vignette tasks. These questions are intended as aids for the training coordinator to use in after action review (AAR) discussions. In addition, the training coordinator guides for some of the vignettes contain job aids that summarize the targeted staff processes. These job aids may be distributed prior to the exercise at the discretion of the training coordinator, depending on the experience of the training participants. For several vignettes, the training coordinator guides also contain sample products that illustrate expected outcomes. These are intended for use by the training coordinator in the AAR as comparison tools.

Description of Multimedia Delivery of TSP Information for a Sample Vignette

To facilitate description of multimedia delivery, one of the COBRAS vignettes, *Conduct Course of Action Analysis*, will be used as an example. This vignette contains most of the types of vignette TSP materials, including orders, previous staff actions, and job aids. Figure 1 presents the table of contents for the paper-based participant guide. This figure, therefore, indicates the information to be delivered in multimedia format.

An assumption of this paper is that the present paper-based TSPs adequately identify the requisite information. On the other hand, the paper-based TSPs may not sufficiently stimulate the user to digest that information. The organization and presentation format of the information must arouse involvement in order to facilitate understanding.

Information Structure

The information included in vignette TSP can be conceptualized as three parts. The first is a vignette overview which includes the definition of the vignette concept and description of the training coordinator. This information applies to all vignettes. Second, the vignette scope, training objectives, lists of participants, and restrictions all provide an introduction to the particular vignette. Third, preparation instructions are essentially pointers that direct the participants to additional actions regarding two subcategories of information, namely, situational background and task information.

These three parts to the vignette TSP suggest a structure for sequencing a multimedia presentation. Figure 2 presents an initial diagram which would present this sequence to the user as an overview of what is to follow. An audio presentation should accompany this screen, describing the diagram and telling the user how to get started.

Introduction to the vignette training concept. The vignette introduction should (a) create appropriate expectations about vignette participation, (b) stimulate interest, and (c) establish credibility. A narrated video presentation can be used to meet all three objectives. The narration should begin with the Fort Knox Force XXI training mission and the role of vignettes in the overall training picture. Videos of training exercises taking place in simulation network (SIMNET), could be used as background to the narrative, pictorially reinforcing the narrative descriptions. The narrative should include a statement of support from the leadership of Fort Knox, perhaps with a video clip of either an interview with the Armor Center commander or a short speech delivered from his office.

PARTICIPANT GUIDE

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Figure 1. Table of contents for participants Guide to Conduct Course of Action Analysis.

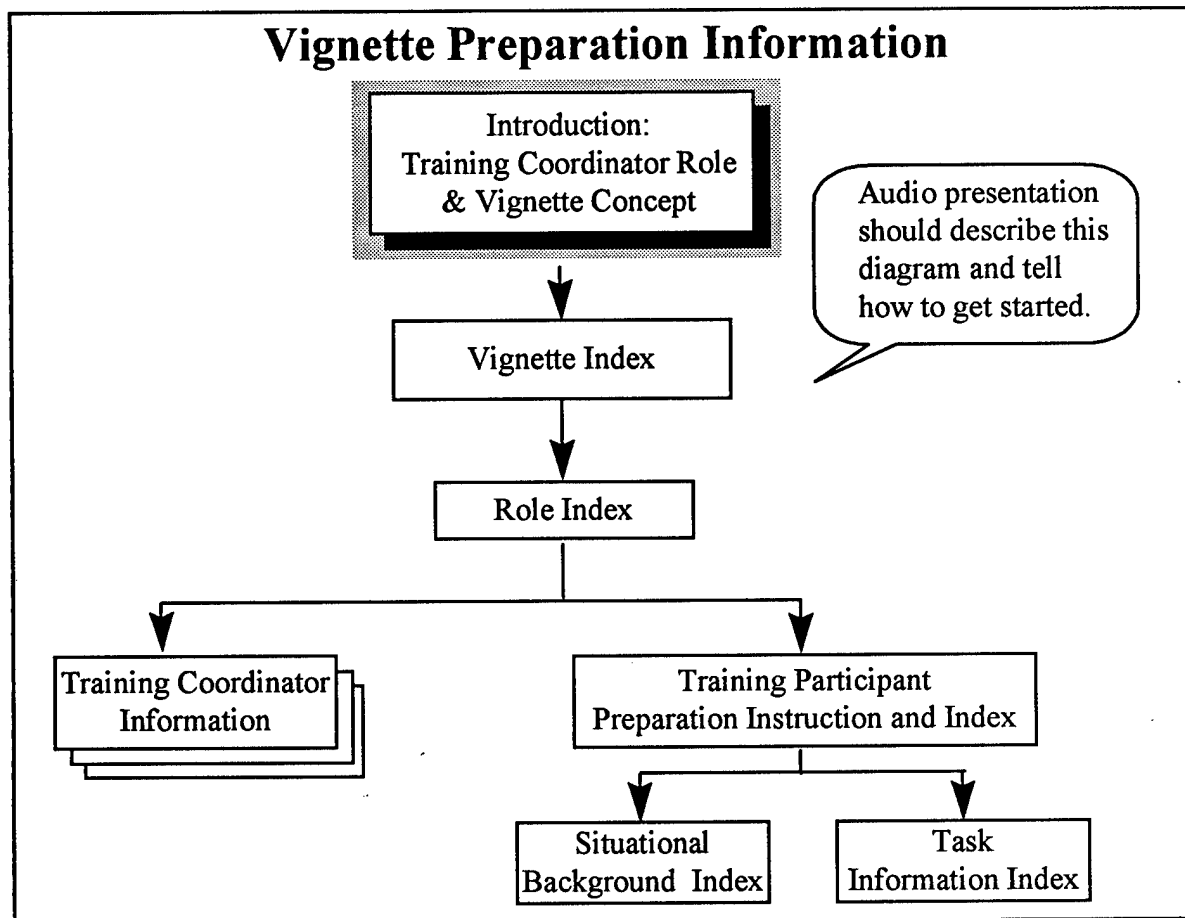


Figure 2. Diagram showing overview of information needed to prepare for vignette training. (On this and following figures, shadows indicate selected buttons.)

With this background, the narration should move to the vignette training concept itself. Videos of a small staff group actually engaged in a vignette practice session would be an effective method to clearly indicate that most of the vignettes are “live simulations” that need minimal setup (a room with a map) and involve very few persons. This visual depiction is important because the vignette is not a typical staff exercise and may not match participants' expectations. For this introductory video of staff members practicing a vignette, the particular staff actions are not important. Rather, the significant message is in the setting and the level of activity. Thus, the narration accompanying these views of vignette practice should describe the character of vignette and not present the participants' dialogue.

After the setting and level of activity have been shown and described, the training participants need to be given an overview of the Executive Officer's (XO) role as training coordinator. Views of vignette practice should be shown highlighting the XO:

- in a pre-training briefing with participants,
- monitoring performance, and
- facilitating an AAR.

Narration should describe the XO's duties. Text displays with the XO's duties summarized should also be shown.

There is no interactivity in the introductory presentation on the part of the users. Therefore, it will be important for the video introduction to be as brief as possible, rapidly paced, with a variety of training scenes, graphic summaries, background music (to transition between topics), and upbeat narration. When the presentation is complete, the vignette index should appear.

Presentation of vignette index. The vignette index needs to begin with a screen from which the user can select a vignette of interest (see Figure 3). The selection may lead to a text overview of the scope of the vignette with voice-over presenting the full text from the existing paper-based TSP. Alternatively a video showing staff activity while the narrative is read. Figure 4 presents the text for the scope of *Conduct Course of Action Analysis*. At this point, the presentation should then give the users three options:

- return to the vignette menu,
- proceed to more information about the role of the training coordinator (which will not be further developed in this paper), and
- proceed to more information about preparation as a training participant.

Vignette Menu		
■ Vig 1:	Plan for Dislocated Civilians	S1, S2, S4
■ Vig 2:	Plan Refuel on the Move	S4, FSB Commander
■ Vig 3:	Develop Concept of Service Support	S1, S4
■ Vig 4:	Develop Reconnaissance and Surveillance Plan	S2, S3
■ Vig 5:	Conduct Target Development	XO, S2, S3, FSO
■ Vig 6:	Develop Air Defense Concept	S2, S3, ADCOORD
■ Vig 7:	Develop Contingency Plan	S2, S3, Engineer, FSO
■ Vig 8:	Conduct Mission Analysis	XO, S1, S2, S3, S4, Engineer, FSO
■ Vig 9:	Develop Courses of Action	XO, S1, S2, S3, S4, Engineer, FSO
■ Vig 10:	Conduct Course of Action Analysis	XO, S1, S2, S3, S4, Engineer, FSO, ADCOORD
■ Vig 11:	Conduct Special Staff Rehearsal	XO, S2, S3, Engineer, FSO, ADCOORD
■ Vig 12:	Coordinate Mission Operations (Janus)	XO, S2, S3, Engineer, FSO, ADCOORD
■ Vig 13:	Coordinate Mission Transition —Offense to Defense (BBS)	XO, S1, S2, S3, S4, FSB Commander, Engineer, FSO, ADCOORD

Vignette 10
will be out
example

Figure 3. Vignette menu.

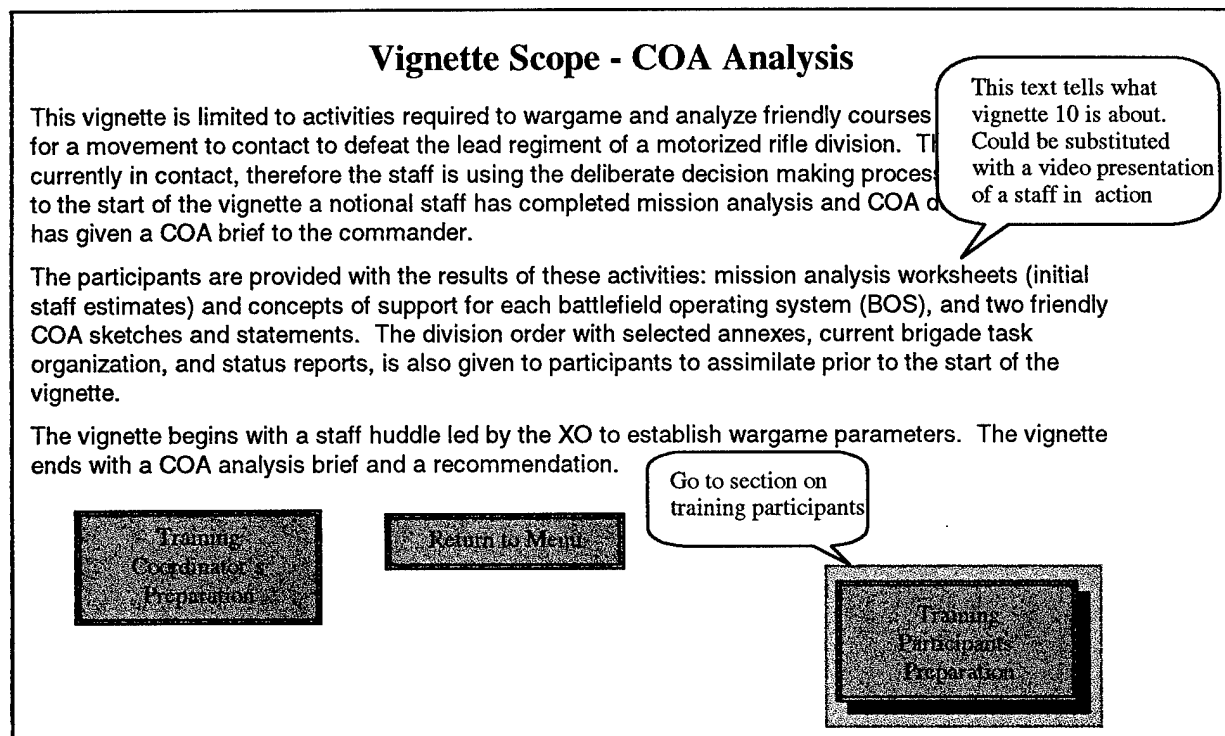


Figure 4. Sample vignette statement about vignette scope.

Preparation Instructions. Instructions about what to study and what to do in preparation for vignette training are presented next. These bits of data were previously characterized as pointers, and this should be their function in the multimedia presentation. That is, a “preparation instructions” introductory screen should indicate that there are five areas of preparation activity (see Figure 5). A menu should be presented listing the following topics:

- restrictions on staff processes during the vignette (see Figure 6)
- lists of maps and overlays to study (see Figure 7)
- description of training area setup (see Figure 8)
- task information
- situational information

Each of these topic titles should be hot-linked to more detailed information. The first three (restrictions on staff processes, descriptions of the training area, and lists of maps and overlays) are simple pieces of information of a paragraph or less. On-screen text, without additional elaborating voice-over or, animation, should suffice. Print options are necessary, particularly for the list of map sheets. The last two items, situational information and task information, are major categories of information each of which will be more fully described below.

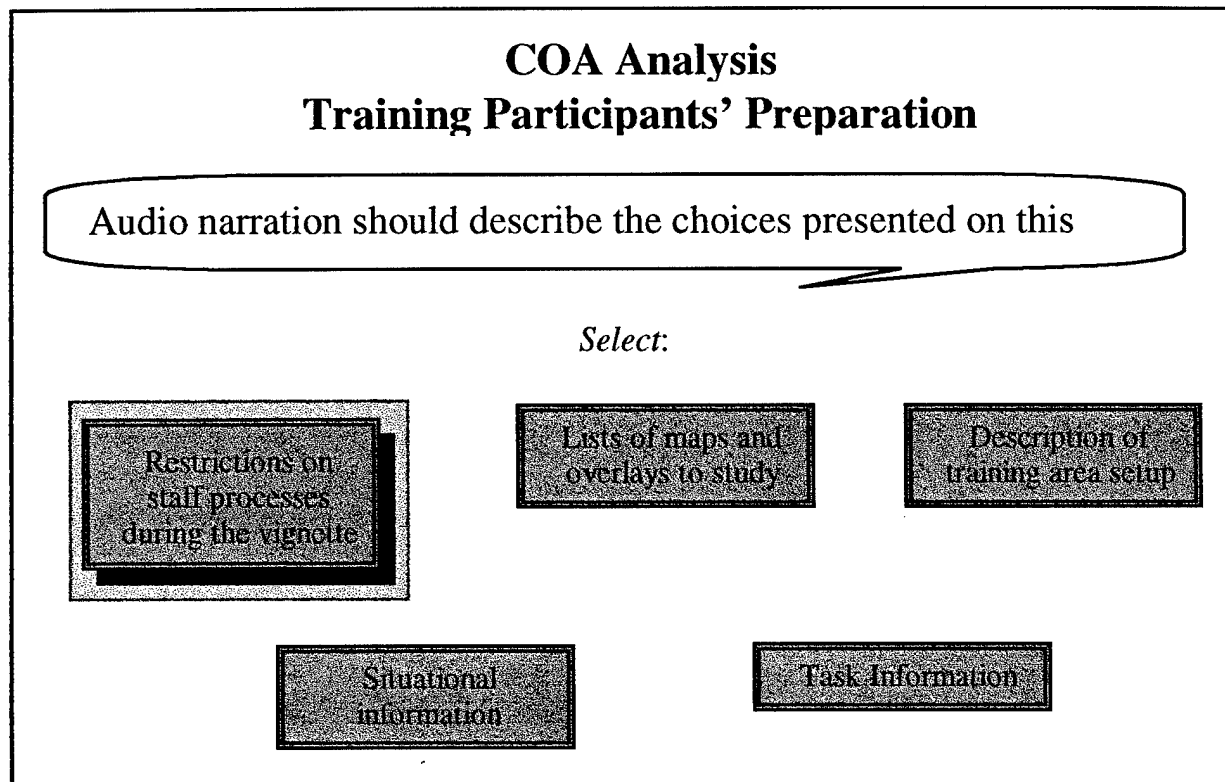


Figure 5. Participants preparation menu.

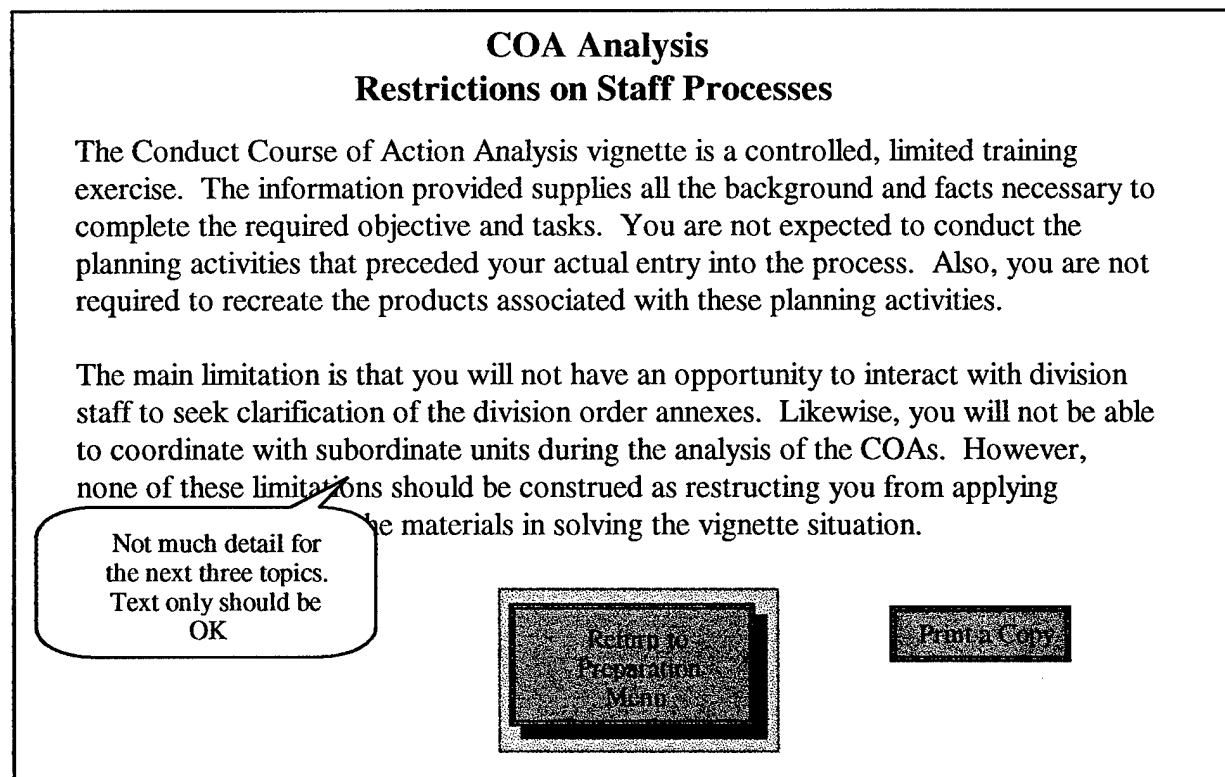


Figure 6. Staff process restrictions.

COA Analysis

Lists of Maps and Overlays to Study

A single set of the following maps, used by all of the training participants, is needed to execute this vignette. At your discretion, you may obtain a separate set for your work area.

- * 1:50,000. Maps, Series V795; Sheets 2553 I, 2554 I, 2554 II, 2555 II, 2653 I, 2653 IV, 2654 I, 2654 II, 2654 III, 2654 IV, 2655 II, 2655 III, 2753 I, 2753 IV, 2754 I, 2754 II, 2754 III, 2754 IV, 2755 II, 2755 III; Edition 4.
- * 1:250,000. Maps, Series 1501 Air; Sheets NI 11-1, 11-2, 11-3, 11-4, 11-5, 11-6, 11-7, 11-8 and 11-9; edition 1987. Note: The maps are not provided with the materials.

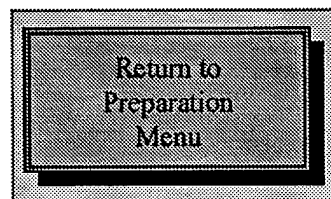


Figure 7. Maps and overlays.

COA Analysis

Description of Training Area Setup

Set up the training site in accordance with guidance from the Training Coordinator. Establish a central working area where all participants will work together as a group. Post the overlays to the maps as required. You must obtain any command post (CP) supplies and accessories which you would normally use during planning.

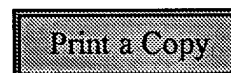
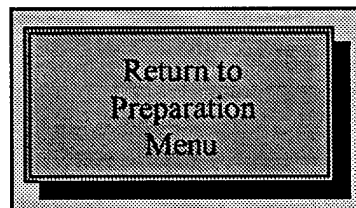


Figure 8. Training setup presentation.

Task Information

Several types of task information may be presented. A task information menu (see Figure 9) indicates the training objective and lists the tasks. Selecting a task should lead to additional information including job aids, AAR preview questions, and a reference list (see Figure 10).

Optional job aids have been included in some vignette TSPs on the assumption that some staffs would find them useful. These job aids may outline the staff processes required by the vignettes or they may be blank forms which cue decision requirements. Both types of job aids are included in the Conduct Course of Action Analysis. Figure 11 presents a flow chart describing the wargaming process, a major part of course of action (COA) analysis. Figure 12 shows a blank synchronization matrix. These job aids are included in the training coordinator's guide, and they can be included in the multimedia presentation for training participants. Furthermore, instructional narratives could be linked to blocks in the flow chart as well as cells in the synchronization matrix. These narratives could provide instructions about the information processes required by the staff to conduct the step in the flow chart or to fill out information in the synchronization matrix. For example, a click on "box method" (see Figure 12) could lead to additional instructions (see Figure 13).

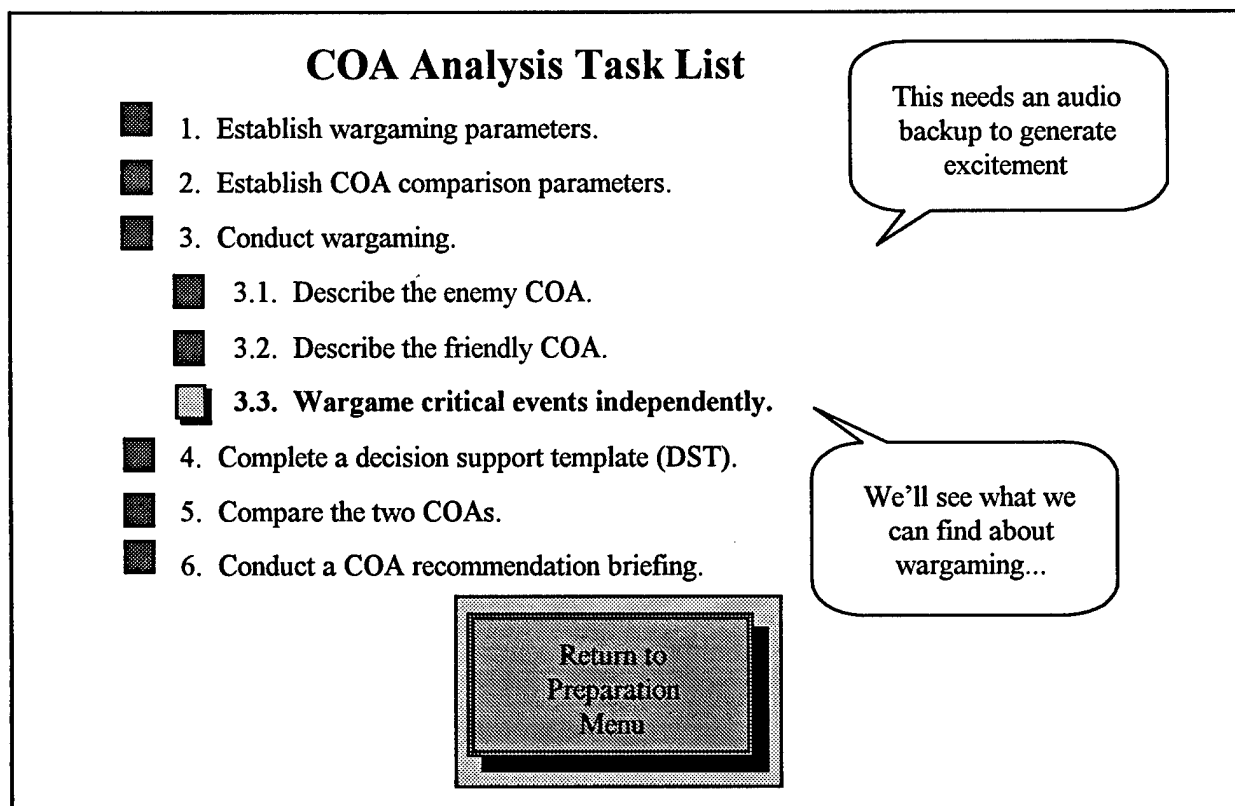


Figure 9. Task menu.

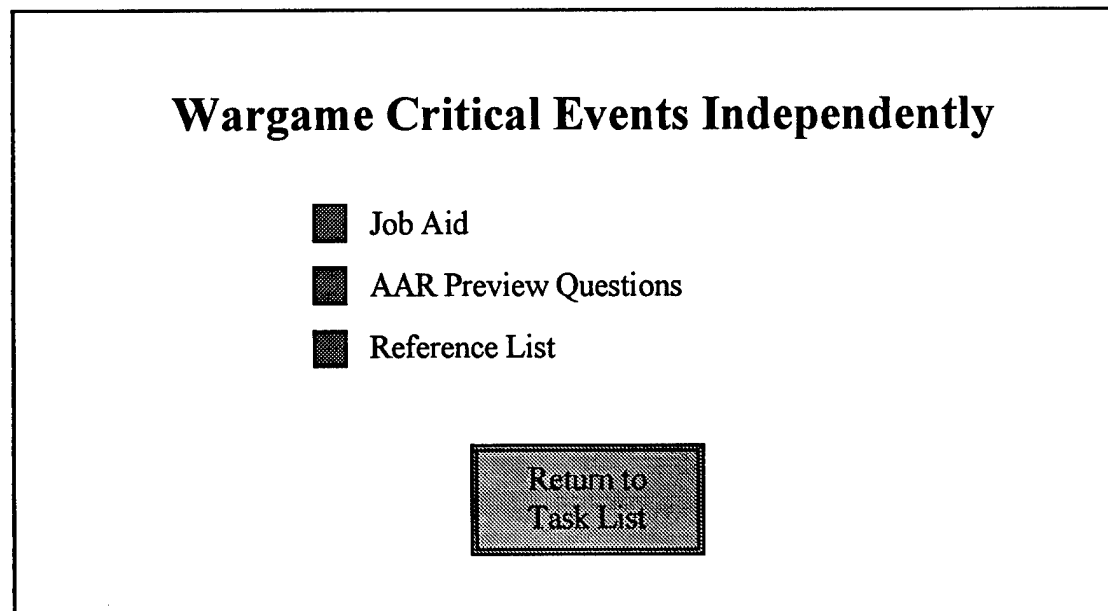


Figure 10. Task information.

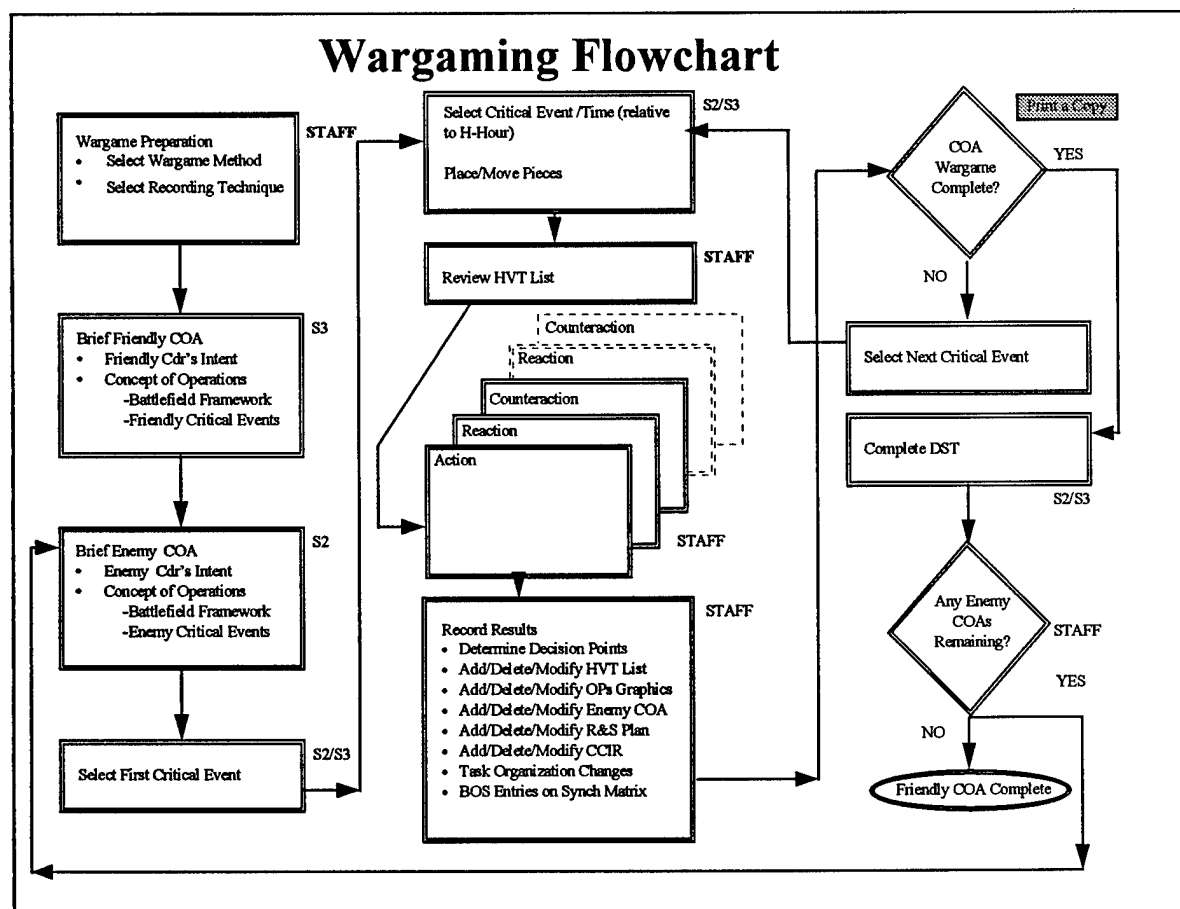


Figure 11. Sample flow chart--Suggested wargame process for a friendly COA.

Synchronization Matrix for Wargaming

Click on matrix items for more

Use with box, belt, or avenue wargame methods.

Print a Copy

Return to
Task List

B a t t l e f i e l d O p e r a t i n g S y s t e m s	I n t e l	What is the "box method?"							
		TAI							
		Sec							
		Deep							
		Close							
		Res							
	M a n e u v e r	Rear							
		Fire Support							
		M-CM-S							
		ADA							
		C2							
		CSS							
	Action								
	Reaction								
	C/Action								
	Notes								
	Decision Points								

Figure 12. Sample job aid--Synchronization matrix.

Box Method

- add
- information
- here explaining
- the box method

View Video Clip
Explanation of
Box Method

Return to
Wargaming
Menu

Figure 13. Additional information about the synchronization matrix.

The training coordinators guide also contains questions to guide AAR discussions. These questions could be programmed in a multimedia presentation for preview before conducting the exercise. With sufficient liveliness (e.g., an animated cartoon caricature of a crusty old observer controller (OC) warning the staff not to get caught failing to attend to the questions), the questions should stimulate more involvement in the exercise. Again, the intent of the presentation is not to teach the fundamental knowledge, but to generate interest and stimulate reflection before starting the exercise.

Situational Context

Brigade staff actions can only be practiced in the context of some real or fabricated situation. The situational background information presented in the vignette TSP must paint a sufficiently complete story for the brigade staff to begin their analysis, decision making, and planning. The amount of information is, however, significant. A thorough understanding of the background is essential for the staff to practice conducting a course of action analysis.

Over half of the participants' guide for *Conduct Course of Action Analysis* is background orders and annexes. In a real setting, the brigade staff receives this information by first hearing a detailed division order brief. They also have access to copies of the division order, annexes, and overlays. Staff members tend to read only the annexes most relevant to their specialty. The paper-based TSP simply delivers the order, annexes, and overlays for the staff to sort out and digest. A multimedia presentation allows consideration of alternative delivery methods. Simply watching a two to three hour video playback of an order brief is very time consuming. Therefore, producing a reenactment of the order brief is not recommended. Rather, it should be possible to streamline presentation of the information contained in the order.

Since the vignette actually begins several steps beyond the staff's receipt of the order, much of the information in the order is incorporated in the notional staff products that are also delivered in the paper-based TSP. Instead of simply presenting the order and the derivative staff products, a story could be constructed which describes the notional staff deriving their products from the order. That is, maps and graphics with text highlighting as appropriate could be shown in animation while a narrator describes the development of each of the various mission analysis worksheets prepared by the XO, S1, S2, S3, S4, FSO, Engineer, and ADCOORD. Other narrated animation segments could describe development of each of the products presented in the TSP. For example, a segment could show development of the concepts of CSS Support by the S1 and S4; another segment could show how the S2 and S3 developed the reconnaissance and surveillance (R&S) plan. Each of these segments could end with a static display of the staff products (as presented in the current TSP), with hypertext links in the products back to the text of the orders or to preceding products. Notice that in this plan the multimedia presentation does not direct the users' attention immediately to the order. Rather, the user first accesses presentations about the derivative products.

Delivery structure. In order to conceptualize product presentations, the relationships among the situational background components in the *Conduct Course of Action Analysis* vignette were analyzed. As a complete network, the structure is rather imposing. However, these

interrelationships can be divided into several layers of information as depicted in Figures 14 through 21. These layers may be used to guide development of multimedia presentation sequences and hypertext linkages.

The first layer, Figure 14, represents the most significant information for this vignette: the brigade's two courses of action. Figure 14 indicates that the two courses of action are closely associated with the brigade commander's guidance and the brigade task organization for the upcoming mission (as specified by Annex A of the division order). Figure 14 can be used to design a multimedia menu screen which would allow users to begin exploring commander's guidance, task organization, and the two courses of action. The user could select one of the four types of information to initiate presentation of that information. The courses of action may be presented by animating the proposed sequences of events showing a map, with graphic control measures, and moving military symbols. A narrator could describe the events and brigade tasks, synchronized with the movements of the symbols. Commander's guidance could be presented with a video clip or animated caricature of the commander presenting his guidance.

The user can be sequentially led through the commander's guidance by a series of screens as shown in Figures 15 through 20. The task organization information could be presented as a narrated tour of the brigade using military symbols on map segments. This would tell the user what the brigade's assets will be for the upcoming mission and where they are currently located.

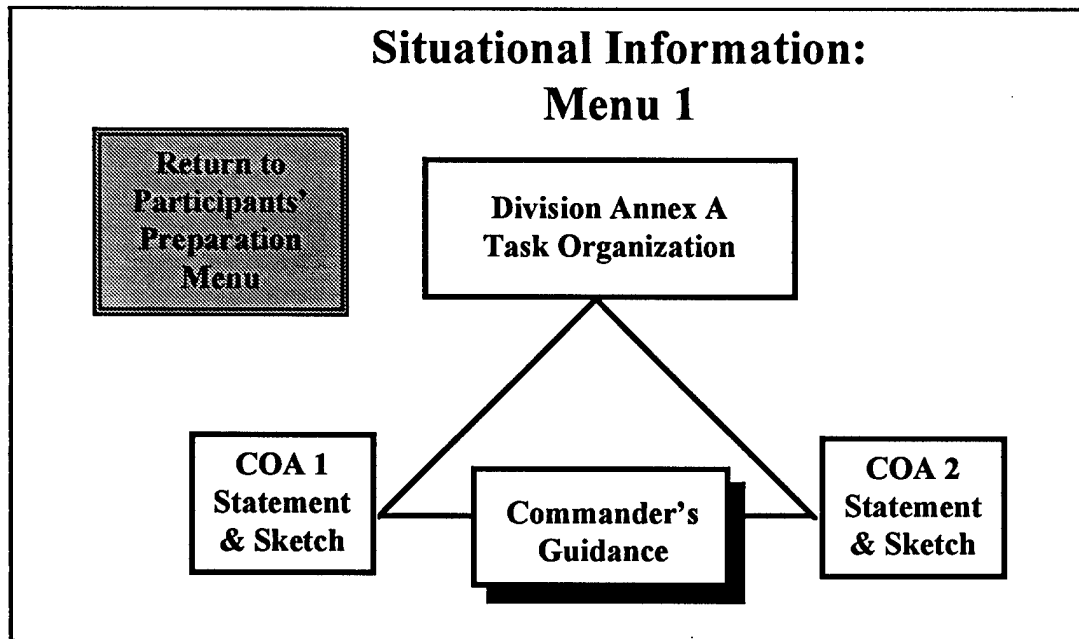


Figure 14. Initial context information.

Commander's Guidance Menu		
Select:		
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">1</div> <div style="border: 1px solid black; padding: 2px;"> Assumptions COA Description </div>	<div style="border: 1px solid black; padding: 2px;"> Troops Available </div>	<div style="border: 1px solid black; padding: 2px;"> Enemy COAs Initial PIR </div>
<div style="border: 1px solid black; padding: 2px;"> Restated Mission: </div>		
<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">2</div> <div style="border: 1px solid black; padding: 2px;"> Initial Intent Task Purpose Endstate Decisive Point Defeat Mechanism </div>		<div style="border: 1px solid black; padding: 2px;"> Concept Close Security Reserve Deep Rear </div>
<div style="border: 1px solid black; padding: 2px;"> <div style="text-align: center; padding: 2px;">Additional Guidance</div> <div style="display: flex; justify-content: space-between; padding: 2px;"> <div style="border: 1px solid black; padding: 2px; width: 30%;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">3</div> Fire Support </div> <div style="border: 1px solid black; padding: 2px; width: 30%;"> ENGR ADA </div> <div style="border: 1px solid black; padding: 2px; width: 30%;"> CSS Timing </div> </div> </div>		
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Return to Situation Menu</div>		

Figure 15. Commander's guidance menu with button 1 selected.

Commander's Guidance - Display 1		
<p>Assumptions: H-Hour (NET 150600 Mar) is enemy advance guard battalions crossing IB.</p> <p>COA Description: I want a minimum to two COAs. In one COA I want to make contact with the enemy as far south as possible, to deny the enemy the terrain north of Coyote Lake. Consider an approach march to maximize rate of advance.</p> <p>The second COA to emphasize force protection during the advance. The location of contact is not as important as having favorable terrain that allows us to mass against the rgt.</p> <p>Wargame each friendly COA against minimum of two enemy COAs.</p>	<p>Troops Available: 3-5 Mech 4xMech Co 1-5 Ar 4xTk Co 1-7 Ar 4xTk Co 4-42 FA (155,SP) 3x8 2-8 FA (155,SP) (R 4-42) 3xi 33 EN Bn</p> <p>Enemy COAs: Consider minimum two COAs.</p> <p>COA 1 (Most Likely): 269 MRR advances with one adv gd bn and two bns in the main body.</p> <p>COA 2 (Most Dangerous): 269 and 218 MRR both advance in zone with one adv gd bn and two bns in main bodies</p>	<p>Initial PIR:</p> <ul style="list-style-type: none"> When will the 231 MRD recon, 269 MRR recon, and 269 main body attack into north-central Mojave? What type of enemy force might threaten our flanks? Will a forward detachment precede the main body attack? What enemy forces will 3 Bde encounter moving southwest? Where did 19 CAA air assault forces establish recon or defensive positions in zone? What deep attack means will the enemy employ against 3 Bde maneuver units, MSRs, and logistics bases as we advance southwest?
<div style="border: 1px solid black; padding: 2px;"> Restated Mission: 3 Bde conducts movement to contact NET 150600 Mar 9X to defeat the 269 MRR in zone. O/O Blocks advance on Barstow Road. O/O Assist FPOL of 25 AD. </div>		
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Listen to Audio Presentation</div>		<div style="border: 1px solid black; padding: 5px; display: inline-block;">View Map</div>
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Return to Commander's Guidance Menu</div>		

Figure 16. Commander's guidance - Display 1.

Commander's Guidance Menu		
Select:		
1	Assumptions COA Description	Troops Available Initial PIR
Restated Mission:		
2	Initial Intent Task Purpose Endstate Decisive Point Defeat Mechanism	Concept Close Security Reserve Deep Rear
3	Additional Guidance	
	Fire Support	ENGR CSS
	ADA	Timing
Return to Situation Menu		

Figure 17. Commander's guidance menu with button 2 selected.

Commander's Guidance - Display 2	
Initial Intent Task: Defeat the 269 MRR. Block advance on Barstow Road. Assist FPOL 25 AD. Purpose: To assist the div in defeating the first echelon MRD and shape the battlefield for the Corps attack to defeat the second echelon divs of 19 CAA. Endstate: The bde assists the forward passage of 25 AD in sector. Decisive Point: Bde close fight to defeat the 269 MRR main body. Defeat Mechanism: Mass two bns, support by FA bn (+), against the main effort in zone.	Concept Close: Consider three Phase operation: Ph I defeat of 269 MRR; Ph II block second echelon regt; Ph III FPOL 25 AD. Security: Ph I deploy adv guard, either full Bn across Bde front or by Bn in sector. Ph II and III minimum scouts screen to front. Reserve: Minimum one (1) Tk Co at any one time. Deep: Defeat of the RAG first priority, then maneuver forces not in contact with TFs. Rear: Except risk to rear with O/O or B/P TCF during advance and fight against 269 MRR.
Listen to Audio Presentation	View Map
Return to Commander's Guidance Menu	

Figure 18. Commander's guidance - Display 2.

Commander's Guidance Menu											
Select:											
1	Assumptions COA Description	Troops Available Enemy COAs Initial PIR									
	Restated Mission:										
2	Initial Intent Task Purpose Endstate Decisive Point Defeat Mechanism	Concept Close Security Reserve Deep Rear									
3	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center; padding: 2px;">Additional Guidance</th> </tr> </thead> <tbody> <tr> <td style="width: 33%; padding: 2px; vertical-align: top;">Fire Support</td> <td style="width: 33%; padding: 2px; vertical-align: top;">ENGR</td> <td style="width: 33%; padding: 2px; vertical-align: top;">CSS</td> </tr> <tr> <td></td> <td style="padding: 2px; vertical-align: top;">ADA</td> <td style="padding: 2px; vertical-align: top;">Timing</td> </tr> </tbody> </table>		Additional Guidance			Fire Support	ENGR	CSS		ADA	Timing
Additional Guidance											
Fire Support	ENGR	CSS									
	ADA	Timing									
<div style="border: 1px solid black; background-color: #cccccc; padding: 5px; display: inline-block;">Return to Situation Menu</div>											

Figure 19. Commander's guidance menu with button 3 selected.

Commander's Guidance - Display 3		
Fire Support: <ul style="list-style-type: none"> Mortars primary support during movement to PL WILDCAT Capable of massing five btys to main effort D: RSTA, c/fire radar S: Accompanying artillery S: AD assets S: MRB(s) POF to main effort. O/O Reserve Priority tgts RSTA (Ph I only), c/fire radar, FA Bty/bn, and MRB	<div style="border: 1px solid black; padding: 10px; min-height: 60px;"> Additional Guidance </div>	CSS: <ul style="list-style-type: none"> Priority of reconstitution Ar Bn, Mech Bn, FA Bn Priority of sustainment Ar Bn, FA Bn, Mech Bn
ENGR: <ul style="list-style-type: none"> Provide S/CM support to the transition to the Hasty Defense Breach enemy rapidly laid minefields 	ADA: Centralized control <ul style="list-style-type: none"> Priorities of protection FA Btys, Mvr units, C2. O/O MSR/CSS assets Initial risk to CSS assets 	Timing: <ul style="list-style-type: none"> OPORD issued 132200 Mar 9X Level III rehearsal 140900 Mar 9X
<div style="border: 1px solid black; background-color: #cccccc; padding: 5px; display: inline-block;">Listen to Audio Presentation</div>	<div style="border: 1px solid black; background-color: #cccccc; padding: 5px; display: inline-block;">View Map</div>	
<div style="border: 1px solid black; background-color: #cccccc; padding: 5px; display: inline-block;">Return to Commander's Guidance Menu</div>		

Figure 20. Commander's guidance - Display 3.

The current task organization and the series of blue (situational) and yellow (logistics) reports add important details about the disposition and strength of the brigade. Figure 21 indicates how a multimedia menu could be designed with links to the current task organization and the status reports. The reports themselves may be presented as text with hypertext links between the reports. A menu system or a database system will be needed to facilitate these links.

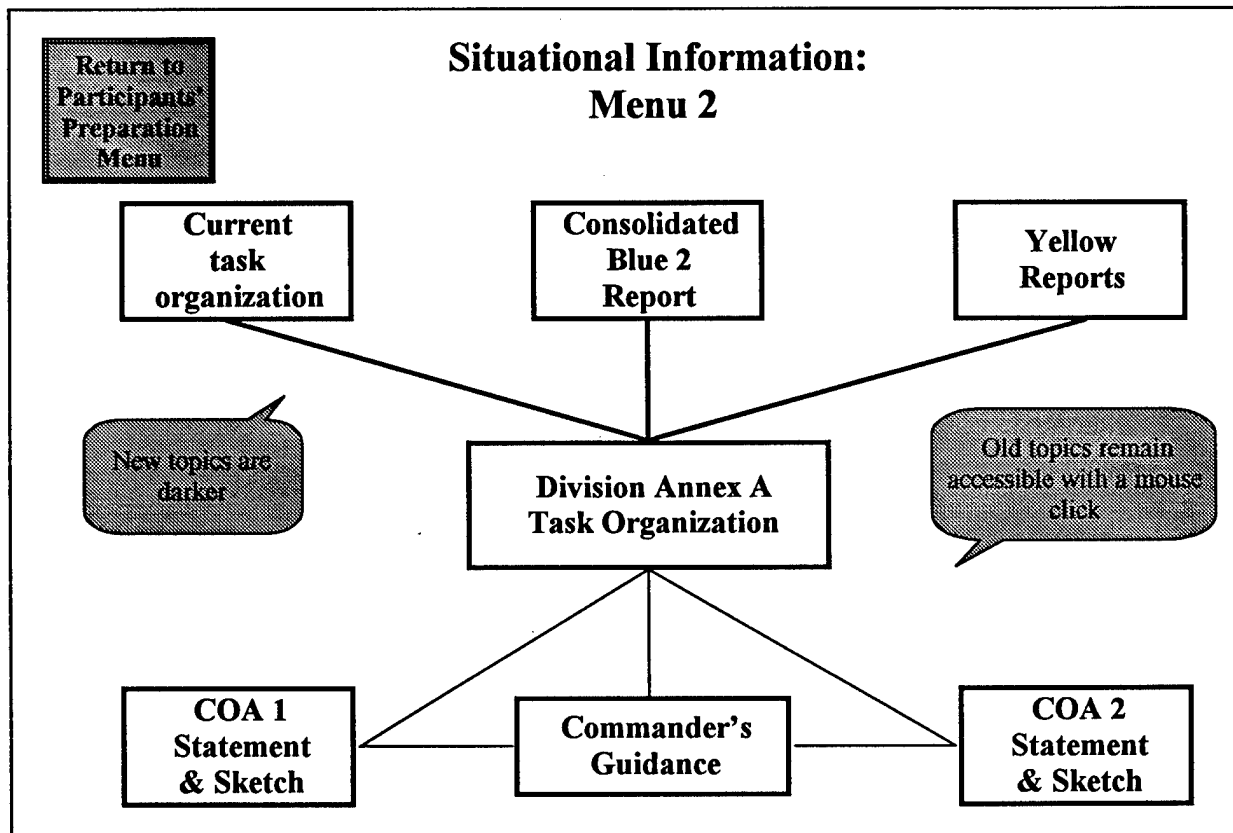


Figure 21. Linkages to details on the strength and disposition of the brigade.

The next menu layer, Figure 22, introduces more supporting details for the brigade's two courses of action, including the initial R&S plan, the brigade high value target list, and the concepts of support for combat service support, air defense artillery, fire support, and engineer. New buttons for this information should be highlighted as indicated by bold type in the figure. These details could be accessed from menus presented at the ends of the presentations for the two different courses of action. The high value target list is a simple chart, so text presentation should suffice. The R&S plan references locations which another narrated, animated map and symbol presentation could convey efficiently. The concepts of support also require reference to locations and synchronization of actions, so again a narrated, animated map and symbol presentation would be useful. On completion of these presentations, the user should be presented with a menu for the third layer of information.

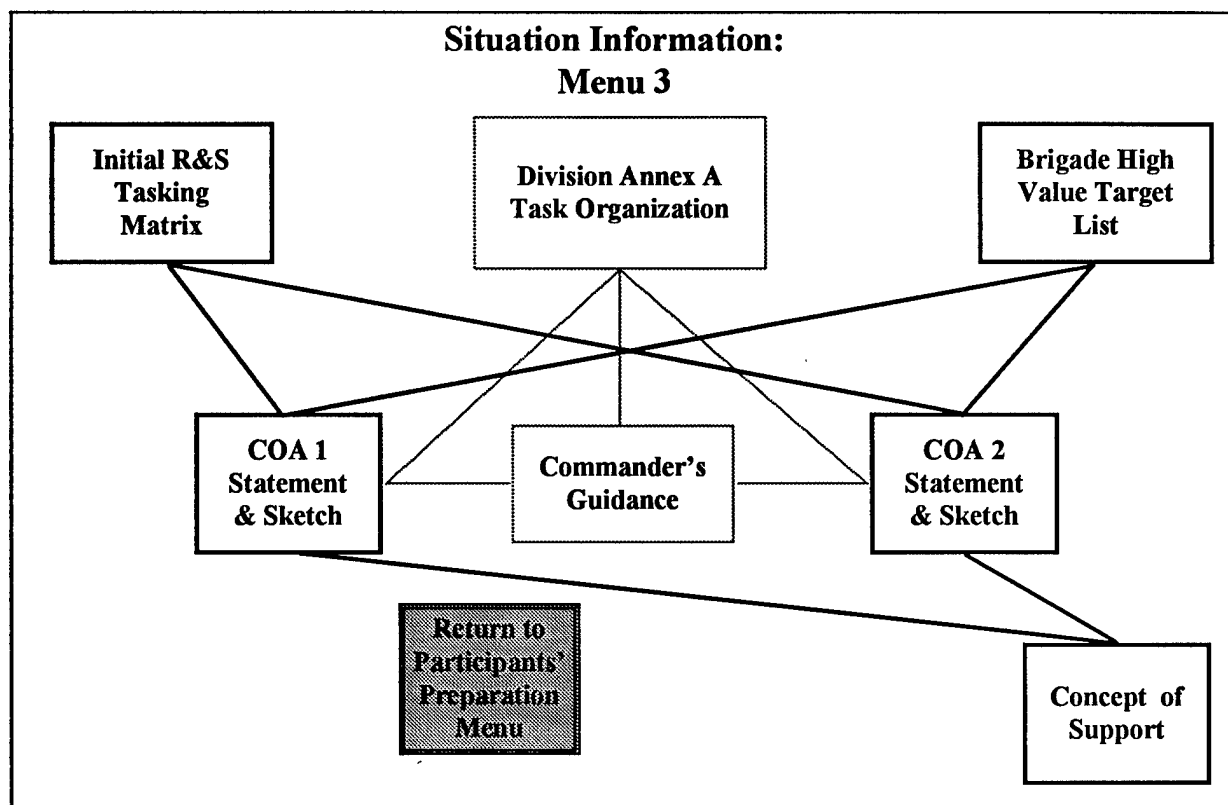


Figure 22. Linkages to some supporting details regarding the courses of action.

Figure 23 depicts the menu for the third layer of information and concerns the division's directives to the brigade. This layer includes the background mission analyses conducted by the staff in deriving the two courses of action. It also includes the base division order.

Figures 24 through 27 represent a series of links to the division order annexes. During course of action analysis the information in the annexes is not nearly as important as the information presented in the mission analyses and the COAs. For this vignette the division order annexes are not as critical because the important information they contain has already been incorporated into the mission analyses and COAs. Simply making the annexes available as test presentations will be sufficient.

This multimedia design has been created to facilitate training participants entry into the COBRAS vignette context. A guiding structure has been created to introduce the most needed information first. The structure requires that the user be actively involved in controlling access to the background information. A variety of presentation modalities are suggested to maintain participants' interest.

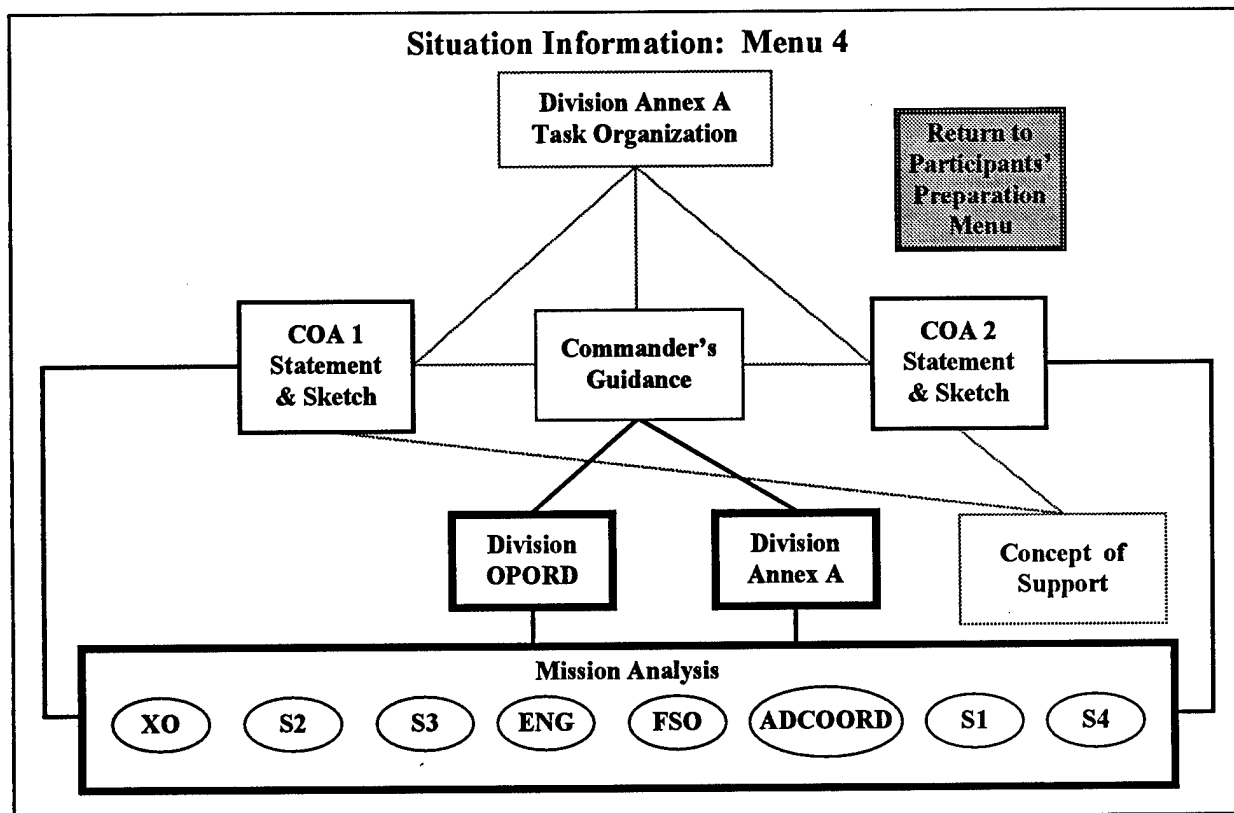


Figure 23. Linkages to access mission analyses.

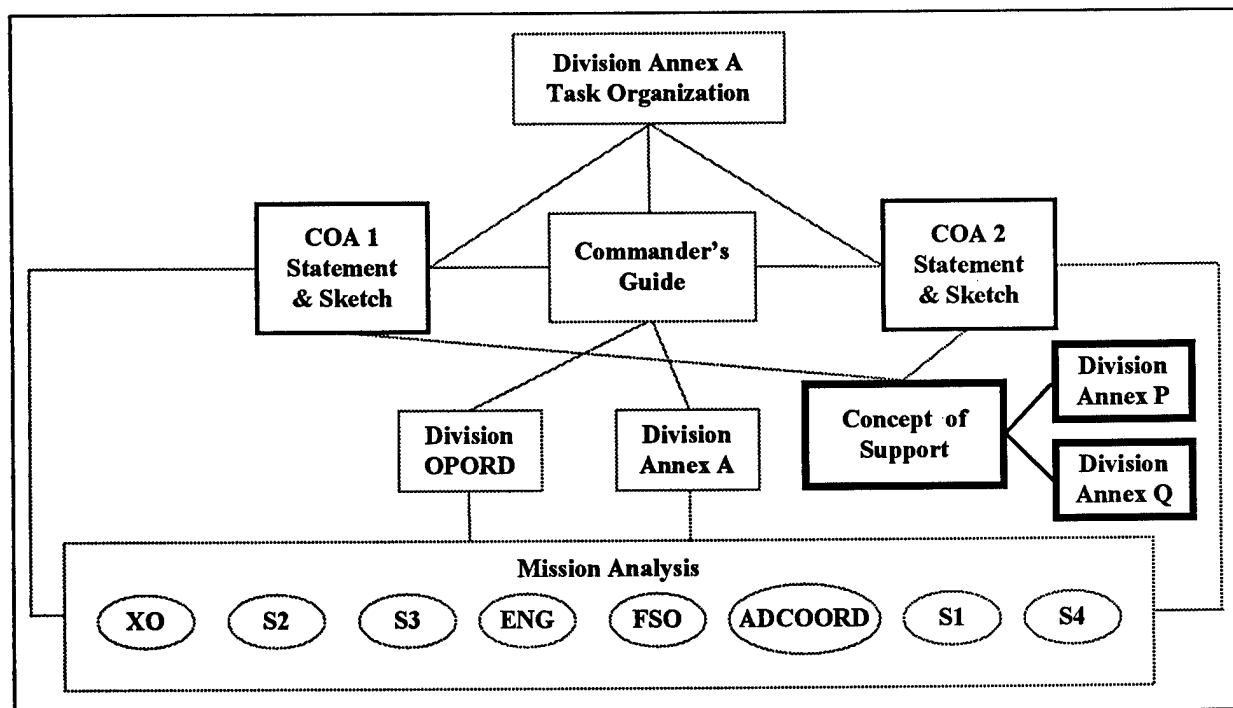


Figure 24. Linkages to division annexes P and Q.

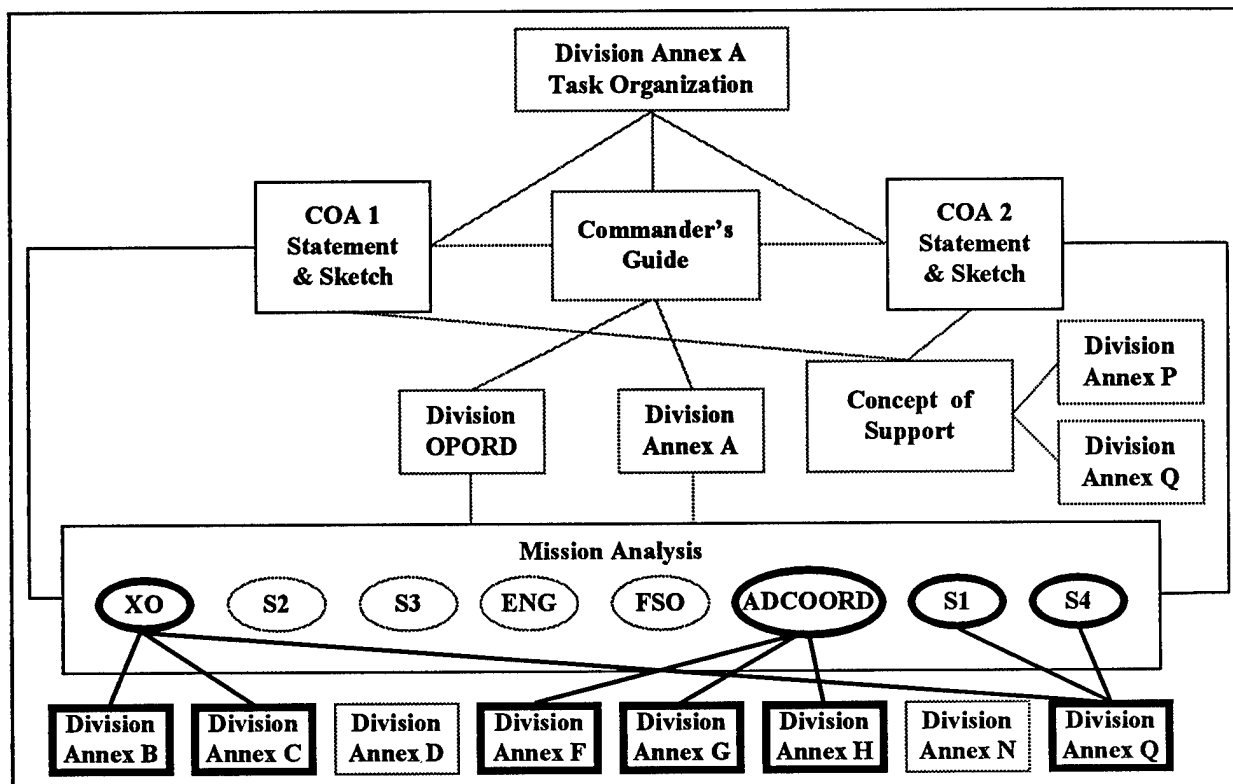


Figure 25. Linkages to division annexes B, C, F, G, H, and Q from XO, ADCOORD, S1, and S4 mission analyses.

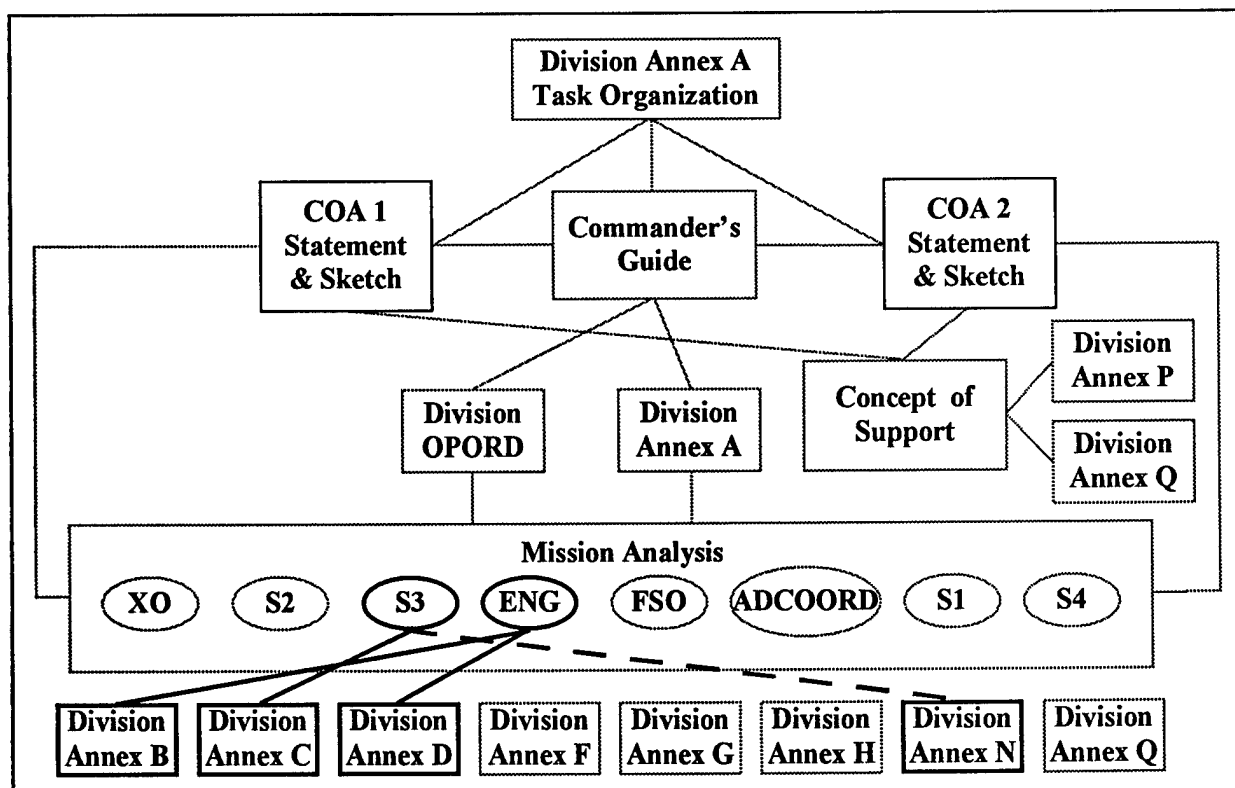


Figure 26. Linkages to division annexes B, C, D, and N from S3 and Engineer mission analyses.

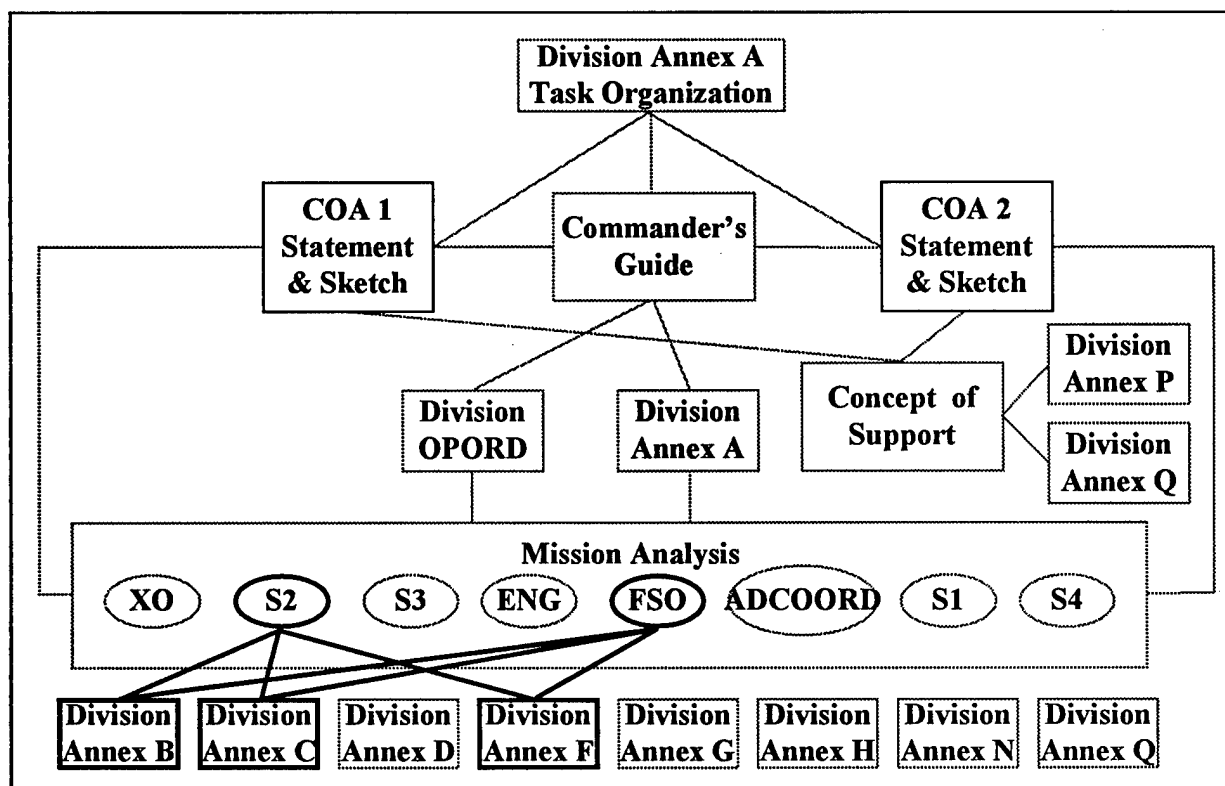


Figure 27. Linkages to division annexes B, C, and F from S2 and FSO mission analyses.

Conclusion

The presenting problem that stimulated this paper is the perceived reluctance among training participants to read the volume of background information needed for participating in COBRAS vignettes. A multimedia solution has been described as an alternative to the paper-based TSPs. This solution is based on the assumption that training participants will be more willing to interact with multimedia than to read a guide book.

Multimedia development, however, is resource intensive. Even though the basic content has been developed, the packaging of the material will require at least the services of script writers, graphic artists, programmers, audio engineers, video engineers, narrators, and producers. Although increasingly these roles are frequently combined, the expertise must be sufficient for a professional result. Certainly production firms with these capabilities are available.

The current multimedia development efforts for the Staff Group Trainer (SGT) project and the TSPs for the Close Combat Tactical Trainer project should provide test beds for determining more about resource requirements and potential payoffs. Initial estimates from the SGT project are that roughly 10 hours of production labor are required for every minute of presentation. Users reactions have not yet been tested, but should be closely monitored. Although the "market" for these brigade training products is small in comparison to the potential development cost, the market is composed of high-level personnel whose time and energy are valuable commodities.

Should the multimedia format prove effective for these pilot projects, the developmental cost for other projects, such as COBRAS vignettes, may be well spent.

REFERENCE

Campbell, C. H. & Deter, D. E. (in press). Combined Arms Operations at Brigade Level Realistically Achieved Through Simulation (COBRAS) Project: History and lessons learned (ARI Research Report). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.